

**IN THE UNITED STATES DISTRICT COURT FOR THE
EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION**

Latasha Holloway, et al.,

Plaintiffs,

v.

City of Virginia Beach, et al.,

Defendants.

Civil Action No. 2:18-cv-0069

Defendants' Memorandum of Law in Support of Motion for Summary Judgment

EXHIBIT FIVE

Expert Rebuttal Report of Douglas M. Spencer, Ph.D.

Response to Report by Dr. Quentin Kidd

Submitted by:
Douglas M. Spencer, Ph.D.

Holloway v. City of Virginia Beach
No. 2:18-cv-00069

August 26, 2019

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Summary

Between 2008-2018 there were sixteen opportunities for a black candidate to win a seat on the Virginia Beach City Council.¹ In ten of these cases the black candidate was the candidate of choice for minority voters. Seven of these ten candidates lost due to white bloc voting. Three white candidates were also candidates of choice for minority voters, and one lost her election due to white bloc voting. In all, of the 13 candidates of choice, white and black, eight lost their elections due to oppositional voting by white voters. In other words, minority-preferred candidates have usually (61.5%) lost due to white bloc voting, *Thornburg v. Gingles*, 478 U.S. 30, 56 (1986).

Minority political cohesion. Minority voters are cohesive when their most preferred candidate earns enough minority support to win an election. Dr. Kidd misinterprets the *Gingles* factors as requiring that candidates earn more than 50% support from minority voters to be considered a candidate of choice. At no time has the Court defined cohesive-ness as 50% support or more among minority voters. In fact, in multi-member districts the Court has acknowledged that the degree of support may be lower when many candidates are running. The *Gingles* factors merely require plaintiffs to provide evidence that candidates with enough minority support to win their election usually end up losing due to white bloc voting. Voting patterns in Virginia Beach clearly meet this standard.

Minority coalitional voting. Minority groups are considered a coalition when they share candidate preferences and their individual group support is sufficient to elect their preferred candidate. Coalitions are not defined by groups sharing more than 50% support for candidates, nor by groups sharing an exactly equal level of support for candidates. In my report I identified 13 candidates whose support from minority voters was sufficient for their election, eight of whom were defeated due to oppositional white bloc voting. I provide further evidence that the minority support for six of these eight candidates represents support from more than just one racial minority group.

Responses to Dr. Kidd

- **Probative elections.** My analysis is limited to elections that are probative of the *Gingles* factors. As is customary, I begin with the assumption that minority candidates provide a setting that is more probative of the question whether racially polarized voting is preventing minority-preferred candidates from winning. This does not mean that minority candidates exclusively are probative, but it serves as my starting point.

¹As I explained in my original report and reiterate below, I exclude George Furman from my analysis because in three races against seven different candidates, Mr. Furman always came in last and never earned the support of minority voters. Elections featuring Mr. Furman do not provide a setting that is probative of the *Gingles* factors and are dropped from the analysis throughout.

- **Data clarification**

- * Source of CVAP. Contrary to Dr. Kidd's assertion, I do not rely on Anthony Fairfax's census block data for my racially polarized voting analysis. My analysis is based on Citizen Voting Age Population (CVAP) estimates at the block group level (not block level) that I downloaded directly from the Census.
- * Precinct files. I rely on the Census TIGER/Line VTD file of 94 precincts for my analysis of elections between 2008-2016. Note that I must drop four precincts in 2016 for which I am unable to merge in CVAP data. I rely on the current shapefile of 100 precincts for my analysis of the 2018 election.
- * Vote totals for at-large elections. Dr. Kidd is correct that my vote totals for at-large seats in 2018 and 2014 (but not 2010) sum to 100% when they should sum to 200%. This was a simple error with no effect on my conclusions as the transformation applies to all estimates for all candidates. Although all estimates—homogeneous precincts, ecological regression, and ecological inference—should be doubled, the relationship between candidates remains unchanged. In addition, the 2014 at-large election includes Furman as a candidate. As I noted above, my analysis treats the Furman race as non-probative, further minimizing the impact of any error.

1 Minority political cohesion

Minority voters are cohesive when their most preferred candidate earns enough minority support to win an election. At no time has the Supreme Court defined cohesiveness as 50% or more among minority voters. In multi-member districts the Court has even acknowledged that the degree of support may be lower when multiple candidates are running.

The second and third Gingles factors direct lower courts to focus their attention on both minority and white voting practices, yet the Supreme Court has not established a strict definition of minority political cohesion, nor has the Court provided a numerical cutoff to determine when majority voting is sufficient for defeating minority-backed candidates. In fact, the Court in *Gingles* acknowledged that “there is no simple doctrinal test for the existence of legally significant racial bloc voting,” 478 U.S. at 58. Instead, the Court noted that “the degree of racial bloc voting that is cognizable as an element of a §2 vote dilution claim will vary according to a variety of factual circumstances,” *Id.* at 57-58, including “the number of seats open and the number of candidates,” *Id.* at 56.

Furthermore, when discussing the evidence necessary to prove minority political cohesion, the Court in *Gingles* held that “showing that a **significant number** of minority group members usually vote for the same candidates is one way of proving the political cohesiveness necessary to a vote dilution claim,” 478 U.S. at 56 (emphasis added). At no time has the Court defined cohesiveness as 50% support or more among minority voters. In fact, in multi-member districts the Court has acknowledged that the degree of support may be lower when multiple candidates are running. The Gingles factors require plaintiffs to provide evidence that candidates with enough minority support to win their election “usually” end up losing due to white bloc voting. Voting patterns in Virginia Beach clearly meet this standard.

In his August 12, 2019 response to my report on racially polarized voting in Virginia Beach, Dr. Quentin Kidd challenged some of my findings by repeatedly relying on the incorrect assumption that minority voters are not cohesive when their support for minority candidates dips below 50%. For example:

- Page 3 (repeated on page 5): “Less than a third of the elections analyzed by Spencer resulted in an African American candidate who **received a majority support** among minority voters...”
- Page 8: “It is thus likely that Rouse...did in fact **receive a majority of the black vote** in 2018.”
- Tables 1-3 all distinguish between candidates who “received cohesive support” and those who “did not receive cohesive support.” The distinguishing feature is support among minority voters at the 50% level or higher.

- Page 10: “Since 2012, two of five African American candidates who **received majority support among African American voters** lost their respective races...”
- Page 10: “...one of four African American candidates who **received majority support among minority voters** lost...”
- Page 10: “...all four African American candidates who **received majority support among minority voters**...”
- Page 10, fn 10: “Cabiness is included in Table 4 but is removed from Table 5, having received according to Spencer’s analysis **51.7% support from black voters** but only 37% of minority voters overall.”
- Page 13: “...if Spencer considered only Jackson or Flores to have **received majority black support**, then his 10th case might be Cabiness in the 2014 Rose Hall district race, who **got 51.7% of the African American vote**. However, like Jackson and Flores, Cabiness was not the choice of minority voters, attracting only 37.0% of their votes.”
- Page 13: “...no more than seven candidates **received a majority of the minority vote**...”
- Page 13, fn 13: “...it is possible (likely) that in 2018 Rouse, who won, **received a majority of the minority vote**.”
- Page 18: “...when Spencer shows a **majority of African Americans supporting** a candidate but a **majority of All Minorities** failing to support that candidate.”
- Table 9 distinguishes between Bullock (2010 Princess Anne) whose support among Asian and Hispanic voters exceeded 50% (according to Dr. Kidd) and four candidates whose support among Asian and Hispanic voters fell short of 50%. Because Bullock exceeds the 50% threshold, Dr. Kidd writes that he “is the only candidate on this list who manages to be the preferred candidate of African American AND Asian + Hispanic voters.”
- Page 22: “Table 10 is a recreation of Table 7 above with changes to reflect instances in which support from Asian + Hispanic voters **failed to reach a majority**.”

Dr. Kidd’s reliance on the idea that minority voters are only cohesive under §2 of the VRA when their support for candidates exceeds 50% is mistaken and results in an unreliable taxonomy of candidates throughout his report. His assumption is only persuasive when just two candidates are running as it would take more than 50% support for a candidate to win. Indeed, in every probative race in Virginia Beach featuring two candidates between 2008-2018, the candidate of choice received more than 50% support from minority voters.² However, as the number of candidates increases the level of minority support necessary to win an election decreases, and most of the probative elections in Virginia Beach involve more than two candidates. Thus, the inquiry into racially polarized voting is contextual and, as the Supreme Court in *Thornburg v. Gingles* explicitly noted, “the degree of bloc voting which constitutes the threshold of legal significance will vary from

²The four probative races that featured two candidates between 2008-2018 were for the Kempsville seat in 2016, the Princess Anne seat in 2010 and 2014, and the Bayside seat in 2010.

district to district,” 478 U.S. at 55-56.

This context explains why a candidate that received 37.0% support from minority voters in one race (James Cabiness in the 2014 Rose Hall special election) was the minority candidate of choice while a candidate that received 34.3% in another race (Pieri Burton in the 2014 Princess Anne election) was not. The former race was an open seat that featured four candidates while the latter race featured a single challenger to the incumbent.

2 Minority coalitional voting

Minority groups are considered a coalition when they share candidate preferences and their individual group support is sufficient to elect their preferred candidate. Coalitions are not defined by groups sharing more than 50% support for candidates, nor by groups sharing an exactly equal level of support for candidates.

As I note in my original report, the population of Hispanic and Asian voters is not large enough to generate precise estimates of candidate preference using traditional statistical methods. As of 2017, the citywide Hispanic CVAP in Virginia Beach is 5.9%, and there are only two precincts with more than 12% Hispanic CVAP—Magic Hollow (14.6%) and Brandon (14.5%). The Asian population is more segregated: although the citywide Asian CVAP is 5.4% there are five precincts with more than 15% Asian CVAP and one (Dahlia) with 21.6% Asian CVAP. Nevertheless, these precinct-level populations are simply too small to draw reliable conclusions about the voting preferences of these groups independently.³ As a result, I did not generate independent estimates for these groups.⁴

The most reliable method for interpreting the candidate preferences of black, Hispanic, and Asian voters is to estimate their joint vote share, which I reported in my original report in a category called “All Minority.”⁵ Black, Hispanic, and Asian voters combined generate estimates that are statistically significantly different from white voting, which then makes a comparison between these groups possible. Does the coalition of black, Hispanic, and Asian voters strongly support candidate X? Are white voters strongly opposing

³Quentin Kidd, “Expert Report of Dr. Quentin Kidd: Response to Spencer and Lichtman,” (hereinafter Kidd Report), p. 5 (“Plaintiffs fail to analyze Hispanic and Asian voters independent of African American voters.”).

⁴Note that I have not generated estimates for races included Ron Villanueva for a similar reason. In footnote 8 of my original report I expressed my intention to evaluate races when Mr. Villanueva was on the ballot. Mr. Villanueva is a former member of the Virginia Beach City Council who was elected to represent District 21 in the Virginia House of Delegates. District 21 comprises just 15 of Virginia Beach’s 100 precincts, meaning there are too few data points to generate good ecological inference estimates.

⁵My category of “All Minority” also included all nonwhite voters. The percent of voters that are not black, Hispanic, or Asian is less than 2% of each precinct. The ecological inference models require that racial percentages sum to 1, which necessitates comparing white voting to all nonwhite voters.

candidate X? These questions are difficult to answer if voting preferences between all of these groups are statistically indistinguishable.

Dr. Kidd criticizes my approach by posing a hypothetical: what if the coalitional support for a candidate is driven by extreme support among black voters that masks weak support among Hispanic and Asian voters? Kidd provides the following example:

	Black	Hispanic	Asian	White	Total
Candidate A	9	1	1	4	15
Candidate B	1	4	4	16	25
	10	5	5	20	40

In Kidd's example above, a category that combines black, Hispanic, and Asian voters will identify Candidate A as the minority candidate of choice with 73.3% support (11 of 15 votes), even though both Hispanic and Asian voters strongly preferred Candidate B by a 4-to-1 margin.

However, as I show below, on the whole there is not evidence that minority voting is fractured. To the contrary, the evidence suggests that the voting preferences of black, Hispanic, and Asian voters are not distinguishable from each other.

In Table 1, I present a summary of minority support for the thirteen candidates (ten black, three white) that I identified as minority candidates of choice in my report. In 11 of the 13 cases, I find that coalitional voting was sufficient enough for minority-preferred candidates to have been elected in the absence of white bloc voting. In just two of the 13 cases (Cabiness in 2014 and Jackson in 2010) I find that minority support was likely not due to coalitional voting.

For all but one of the 13 candidates, support from black voters was sufficient for the candidate to have been elected in the absence of white bloc voting. Given the large black population in Virginia Beach, the estimated support of black voters is statistically significantly higher than the threshold necessary for each candidate to win his/her election. The estimates for Hispanic and Asian voters are much noisier due to smaller populations. Consider the case of Aaron Rouse, a black male candidate who won an at-large seat in 2018. In order to have won an at-large seat in 2018 a candidate needed to earn at least 45.2% of the vote. Support among black voters exceeded 70%, plus or minus 6%, meaning we can be confident that black support exceeded the threshold of 45.2%. By contrast, support among Asian voters is estimated to be $53.0\% \pm 15.24$. Thus, while the estimated vote share exceeded the threshold needed to win, the confidence interval is large enough that it is possible Asian support was not strong enough to help elect Mr. Rouse. Finally,

Year	Seat	Candidate	Threshold to win	Support above threshold			Minority preferred?	Won?
				Black	Hispanic range	Asian range		
Minority candidates								
2018	At-large	Rouse	45.2	✓	✓	✓	Y	Y
2018	Centerville	Wooten	62.1	✓	✓	✓	Y	Y
2016	Kempsville	Ross-Hammond	59.4	✓	✓	×	?	N
2014	Rose Hall	Cabiness	48.3	✓	×	×	N	N
2012	Kempsville	Ross-Hammond	32.2	✓	✓	✓	Y	Y
2011	At-large	Sherrod	37.0	✓	✓	✓	Y	N
2010	At-large	Jackson	44.8	✓	×	×	N	N
2010	Princess Anne	Bullock	54.4	✓	✓	✓	Y	N
2008	At-large	Allen	44.1	✓	✓	✓	Y	N
2008	Kempsville	Flores	48.7	✓	✓	✓	Y	N
White candidates								
2018	At-large	White	45.2	✓	✓	×	?	N
2014	Princess Anne	Henley	76.7	✓	✓	✓	Y	Y
2010	At-large	Bellitto	44.8	×	✓	✓	?	Y

Table 1: Summary of minority support for candidates in races where at least one candidate was nonwhite. Minority support sufficient to have elected a candidate in the absence of white bloc voting is marked with a ✓. Because the population of Hispanic and Asian CVAP prevents precise estimates of candidate preference, support is marked with a ✓ when the null hypothesis that candidates did not receive support sufficient to be elected in the absence of white bloc voting is rejected.

the estimated support of Hispanic voters is 34%, suggesting that Mr. Rouse was less preferred than other candidates. However, the estimated Hispanic support has a confidence interval of $\pm 20.9\%$ meaning support among Hispanics could very well be *higher* than support among Asians. How do we make sense of this uncertainty?

To draw my conclusions, I adopt the logic of equivalence testing.⁶ The purpose of an equivalence test is to determine whether two or more groups are equivalent. Contrary to Dr. Kidd’s assertion that I am merely assuming coalitional voting (Kidd Report p. 17), the baseline assumption of an equivalence test (usually referred to as the “null hypothesis”) is that groups are *not* the same. I then compare the distribution of each minority group to determine whether there is evidence that the groups are, in fact, the same. If the groups are determined to be the same, then I reject the null hypothesis.

When using an equivalence test, we start by assuming that black, Hispanic, and Asian voters each prefer different candidates due to the logic of Dr. Kidd’s hypothetical above. A traditional equivalence test compares the distribution of two datasets in the abstract and rejects the null hypothesis when there is at least 10% overlap between two distributions (for p-values less than the standard 0.05 level). An equivalence test in the context of coalitional voting compares the distributions of black, Hispanic, and Asian vote shares

⁶See Erin E. Hartman & F. Daniel Hidalgo. 2018. “An Equivalence Approach to Balance and Placebo Tests,” *American Journal of Political Science*, 62(4): 1000-13.

not in the abstract, but against the threshold needed for a candidate to win his/her election. In other words, even in the absence of overlapping distributions, two groups are deemed a coalition if they both exceed the threshold. For example, if the threshold for victory is 30% and the distribution of vote shares is 85% ($\pm 10\%$) for black voters, 40% ($\pm 8\%$) for Hispanic voters, and 28% ($\pm 6\%$) for Asian voters, we would reject the null hypothesis that these groups are different not because their distributions overlap each other, but there is at least 10% overlap with the threshold. This use of equivalence testing is admittedly permissive, though not so permissive as to reject the null hypothesis in every case. Indeed, there is facial validity to the results of this test as it identifies a fractured coalition in support of James Cabiness in 2014. Although support for Mr. Cabiness was strong among black voters, the Hispanic vote was split among all four candidates, and Asians coalesced around Mr. Cabiness's opponent.

In short, when estimating the exact voting preferences of minority voters the larger the population, the more precise the estimates. But we are not helpless in understanding patterns of support that implicate the Voting Rights Act. In my report I identified thirteen candidates whose support from minority voters was sufficient for their election, eight of whom were defeated due to oppositional white bloc voting. In this report I provide further evidence that the minority support for six of these eight candidates represented more than just one racial minority group.

On pages 19-23 of Dr. Kidd's report, Dr. Kidd argues that allegedly lower turnout among Hispanic and Asian voters "produces an over-estimate of the Asian + Hispanic support for black candidates." Kidd Report, p. 21. However, Dr. Kidd is incorrect that an alleged variation in turnout levels would erase the existence of a minority voting coalition. As shown above, there is substantial evidence of minority coalitional voting in Virginia Beach. Further, courts have entirely discounted analyses such as Dr. Kidd's. See *Montes v. City of Yakima*, 40 F. Supp. 3d 1377, 1405 (E.D. Wash. 2014) ("...the Ninth Circuit has prohibited district courts from discounting statistics about a minority group's candidate preferences on the basis of low voter turnout. See *Gomez*, 863 F.2d at 1416 ('The district court erred by focusing on low minority voter registration and turnout as evidence that the minority group was not politically cohesive.'). This makes good sense; 'if low voter turnout could defeat a section 2 claim, excluded minority voters would find themselves in a vicious cycle: their exclusion from the political process would increase apathy, which in turn would undermine their ability to bring a legal challenge to the discriminatory practices, which would perpetuate low voter turnout, and so on.' *Blaine Cnty.*, 363 F.3d at 911.").

Further, on pages 32-34 of my original report, I provided an analysis with reconstituted election results showing that the Illustrative Plan's Districts 1 and 2 would perform, in other words, allow minority voters an opportunity to elect candidates of their choice, "not just because of the sheer number of minority voters in each district, but because voting in these districts is less likely to be racially polarized. This means that black and other minority candidates are more likely to win in these districts, and are more likely to benefit from cross-over support from white voters." (Spencer Report, p. 32). In Appendix C of this report, I update the analysis on pages 32-34 of my initial report to include the 2018 election results, which again confirm that the Illustrative Plan's Districts 1 and 2 gives minority voters the opportunity to elect candidates of their choice.

3 Other

Probative elections

Dr. Kidd notes in footnote 6 on page 6 that "Spencer analyzes 17 contested elections with at least one African American candidate. However, between 2008-2018 there were 27 contested City Council elections in Virginia Beach. Despite Spencer and plaintiffs' concession that white candidates can be and have been minority candidates of choice, they do not conduct a full analysis of all contested City Council elections during this time." Dr. Kidd is correct that I do not present an analysis of all City Council elections between 2008-2018. My analysis is limited to elections that are probative of the *Gingles* threshold test. As is customary, I begin with the assumption that minority candidates provide a setting that is more probative of the question whether racially polarized voting is preventing minority-backed candidates from winning. This does not mean that minority candidates exclusively are probative, but it serves as my starting point. Fourteen black candidates ran for the City Council between 2008-2018, some more than once. One example of a repeat campaigner is Mr. George Furman who ran for the Bayside seat in 2010, for the at-large seat in 2014, and for Mayor in 2016. In all, Mr. Furman ran against seven different candidates and came in last every single time. More importantly for the current purpose, minority candidates preferred Mr. Furman's opponents every single time, meaning elections that featured Mr. Furman are not probative of potential racially polarized voting. Had Mr. Furman lost a single election, or earned a "significant number" of minority supporters (per *Gingles*⁷) then his candidacies would have raised probative questions about racial vote dilution. However, as a habitual campaigner with overall support in the single digits and minority support for his opponents, elections featuring Mr. Furman do not provide a setting that is probative of the *Gingles* factors and so I drop him from my analysis, although I included an analysis of his races in the Appendix of my original report in the spirit of full transparency.

⁷478 U.S. 30, 56 (1986).

Of the remaining 13 candidates, three ran for office twice. Ms. Amelia Ross-Hammond was elected to the Kempsville seat in 2012 and then lost her re-election bid in 2014. Mr. James Cabiness ran for one of the at-large seats in 2010 and 2014, coming in last place both times. Unlike Mr. Furman above, however, Mr. Cabiness was the minority candidate of choice in 2014 (although he earned just 6.4% of the white vote), and in 2010 he ran against another popular black candidate (Mr. Andrew Jackson) who was, himself, the candidate of choice for the at-large seat in 2010 and the Kempsville seat in 2008.

In all, there were sixteen opportunities for a black candidate to win office between 2008-2018. In ten of these cases the black candidate was the candidate of choice for minority voters. Of the six who were not the candidate of choice, five ran against another black candidate and one lost to a popular incumbent. Ultimately, 7 of the 10 candidates of choice lost due to white bloc voting.

There were three elections featuring black candidates where a white candidate was a minority candidate of choice. Two of these elections were for at-large seats, where minority voters preferred one black and one white candidate for the two seats—Rouse (B) and White (W) in 2018, Jackson (B) and Bellitto (W) in 2010. The third white candidate of choice was longtime incumbent Barbara Henley who defeated the minority candidate of choice in 2010 and then became the minority candidate of choice in 2014.

Contrary to Dr. Kidd's analysis (based on a theory that minority cohesion requires 50% support), including white candidates of choice does not undermine the Gingles analysis. Indeed, of the 13 minority candidates of choice, white and black, eight lost their elections due to oppositional voting by white voters. In other words, minority-preferred candidates usually (61.5%) lost due to white bloc voting.⁸

My data

Source of CVAP

Dr. Kidd claims in footnote 4 on page 5 that “the dataset used by Spencer is provided by plaintiffs’ expert witness Anthony E. Fairfax.” This is incorrect. My analysis of racially polarized voting—homogeneous precinct analysis, ecological regression, and ecological inference—is based on Citizen Voting Age Population (CVAP) estimates at the block

⁸Note that even according to Dr. Kidd's own analysis, “when White candidates who were the preferred candidates of minority voters are considered. . .the number of African American-preferred candidates who won their races is seven of 17, including six of seven since 2012.” Kidd Report, p. 5. Taking this statement at face value, ten of 17 minority-preferred candidates, including white candidates, lost their race. In other words, even according to Dr. Kidd, minority-preferred candidates “usually” lose their election due to white bloc voting.

group level that I downloaded directly from the Census. Confusion on this issue likely stems from my reference to “census blocks” (as opposed to “block groups”) in Appendix A. Dr. Kidd should have had access to the data that I used, which were provided to counsel for defendants as well as step-by-step documentation for downloading the data and merging them to precinct shapefiles.

Precinct files

Dr. Kidd claims in footnote 5 on page 5 that “Spencer has maintained the same 94 precinct configurations from 2008 throughout his analysis, taking no account of the newly drawn (or redrawn or newly created) precincts and the new voters in those precincts.” This is also incorrect. My analysis of the 2018 election was based on election returns and CVAP data for all 100 (current) precincts in Virginia Beach. These data were disclosed in the file “cvap2018.csv.” Dr. Kidd cites to this file in footnote 18 of his report. Unfortunately, I was unable to locate a shapefile for 2016, when the City increased the number of precincts from 94 to 98. I contacted the Virginia Beach Center for Geospatial Information Services about this file in July 2018. On Sept. 26, 2018 I received an e-mail from Ms. Nina Gilbert of the Virginia Beach Center for GIS informing me (in response to my query) that the City does not “keep the previous year on the voting changes due to the fact that a third party makes those decisions.” Ms. Gilbert directed me to the Census TIGER/Line VTD files, which I used for my analysis. See Appendix A. The Census files provided me with all relevant precincts from 2008-2014. My analysis in 2016 drops the four precincts for which I am unable to merge in CVAP data because the precinct file is not available.

At-large elections in 2018 and 2014

Dr. Kidd is correct that my vote totals for at-large seats in 2018 and 2014 (but not 2010) sum to 100% when they should sum to 200%. This was a simple error with no effect on my conclusions as the transformation applies to all estimates for all candidates. Although all estimates—homogeneous precincts, ecological regression, and ecological inference—should be doubled, the relationship between candidates remains unchanged. The updated numbers for the 2018 and 2014 at-large election seats are reported in Appendix B.

Douglas M. Spencer

August 26, 2019

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Date: August 26, 2019

A handwritten signature in black ink, reading "Douglas Spencer", written over a horizontal line.

Douglas M. Spencer, Ph.D.

Professor of Law & Public Policy

University of Connecticut

Douglas M. Spencer

August 26, 2019

Appendix A

Correspondence with Virginia Beach Center for GIS

<https://outlook.office.com/mail/search/id/AAQkADFIM2RjNT...>

Re: Question

Douglas Spencer

Wed 9/26/2018 3:27 PM

To: Nina L. Gilbert <NGilbert@vb.gov>

Nina --

I appreciate you following up with me on this. TIGER/Line has VTD shapefiles for 2008-2014, but for some reason they don't have the 2016 file. Oh well, it could be a timing thing and they are still updating their database (they don't have 2018 either, but that is available through gis.vb.gov).

In any case, I really appreciate your effort. And I'll keep digging around as well.

All the best,
Doug



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Social Impact, Down to a Science.

From: Nina L. Gilbert <NGilbert@vb.gov>
Sent: Wednesday, September 26, 2018 3:04:54 PM
To: Douglas Spencer
Subject: RE: Question

Doug, I just found out that we don't keep the previous year on the voting changes due to the fact that a third party makes those decision. However I came across a link that may help you out. Sorry for the delay in founding this answer out for you. Please try the link and let me know if it helped you out any. Have a great day. Nina

<https://catalog.data.gov/dataset/tiger-line-shapefile-2014-county-virginia-beach-city-va-all-roads-county-based-shapefile/resource/49fa6da4-63b4-4e6d-9020-475371a85466>

Nina L. Gilbert, GISP

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ngilbert@vb.gov

From: Douglas Spencer [<mailto:dougspencer@uchicago.edu>]
Sent: Monday, September 24, 2018 10:48 AM
To: Nina L. Gilbert

Appendix B

Updated At-Large Election Estimates

	Candidate (incumbent [†])	Overall vote		HP	ER	EI	Won election?	Minority cand. of choice	Minority % ↑ winner?
2018	Rouse	54.5	Black	68.8	82.3*	73.7		✓	
			All Minority	72.1*	70.4*	65.9	✓	✓	
			White	55.1	47.0	48.9			
	Moss [†]	45.3	Black	20.4*	0.0*	0.0*			
			All Minority	20.7*	6.6*	7.8*	✓		
			White	53.2	62.2	62.0			
	Oliver	45.2	Black	35.2	18.3	14.1			
			All Minority	33.9	28.6	28.3			
			White	50.9	52.0	52.2			
	White	27.4	Black	45.1*	69.6*	70.2*		✓	✓
			All Minority	42.5*	52.8*	52.0*		✓	✓
			White	19.3	16.3	16.7			
2014	Bright	17.7	Black	22.9*	38.9*	45.9*			
			All Minority	23.3*	32.0*	33.1*			
			White	12.3	11.8	11.5			
	Hubbard	10.1	Black	7.5	8.4	4.6			
			All Minority	7.6	9.6	8.1			
			White	9.2	10.7	11.7			
	Davenport	65.5	Black	100.0	100.0*	99.6*		✓	
			All Minority	93.2	90.7*	91.3*	✓		
			White	64.0	56.0	56.6			
	Moss [†]	64.2	Black	44.6*	27.4*	27.6*			
			All Minority	49.2*	42.0*	42.3*	✓		
			White	70.5	73.0	73.1			
	Martin	53.1	Black	30.1	16.8*	22.0*			
			All Minority	33.7*	33.6*	37.8*			
			White	54.1	59.8	58.4			
	Furman	15.9	Black	21.6*	37.7*	46.0*			
			All Minority	22.4*	31.1*	32.7*			
			White	10.6	10.5	10.3			

* $p < 0.05$ (minority vs. white support). Candidates of color highlighted by red text.

Appendix C

2018 Election Performance in Illustration Districts 1 and 2

Year	Candidate	At-large		District 1		District 2	
		Total votes	Win election?	Total votes	Win election?	Total votes	Win election?
2018	Rouse*	54.5	✓	61.1	✓	59.2	✓
2018	Moss	45.3	✓	33.5		37.5	
2018	Oliver	45.2		40.6	✓	45.2	✓
2018	White	27.4		35.0		31.7	
2018	Bright*	17.7		20.5		19.4	
2018	Hubbard	10.1		10.2		10.3	

Table 2: Estimated vote shares for 2018 at-large election. Actual election returns are reported as “At-large” total votes. Shaded rows indicate the black candidate of choice. * indicates minority candidate. Although the losing candidate of choice (Allison White) would not have won in either District 1 or District 2, her margin of defeat would shrink from 18% to just 5.6% in District 1 and 13.5% in District 2. Furthermore, minority candidates preferred Dee Oliver over the incumbent John Moss by a three-to-one margin, yet Moss won re-election. In Districts 1 and 2, Ms. Oliver would have won a seat on the City Council instead.

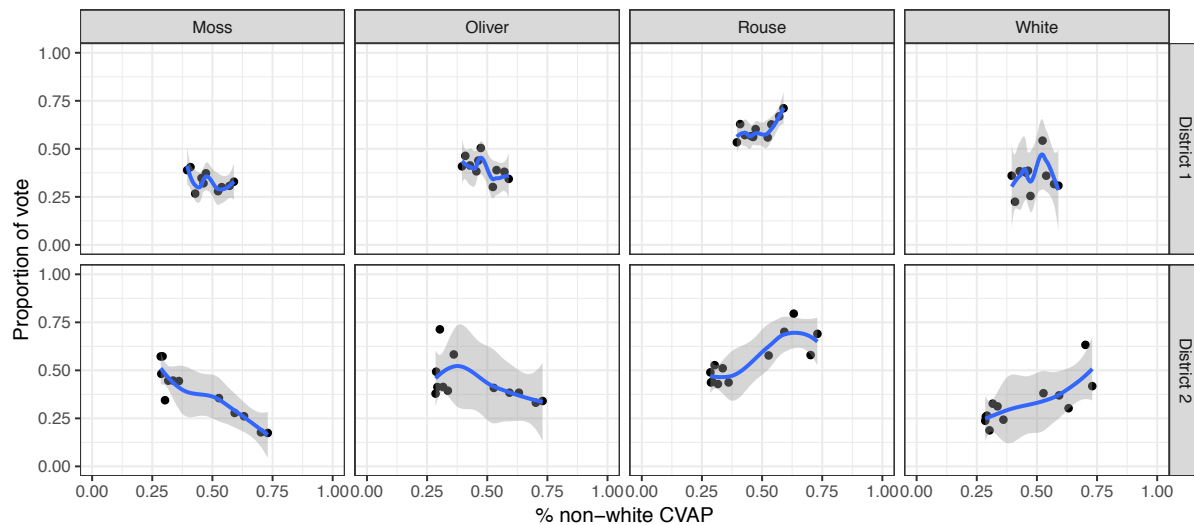


Figure 1: Precinct-level election returns for top four candidates in the 2018 at-large election. Although Mr. Moss and Mr. Rouse would face racially polarized voting in a hypothetical matchup in District 2, the election preferences of white and minority voters is statistically indistinguishable or not substantively significant for all other hypothetical elections in both districts.